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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,134	01/20/2004	Yasuyuki Koyagi	65326-031	6665
7590 02/07/2006 McDermott, Will & Emery 600 13th Street, N.W. Washington, DC 20005-3096			EXAMINER RAO, G NAGESH	
			ART UNIT 1722	PAPER NUMBER

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/759,134	KOYAGI ET AL.	
	Examiner	Art Unit	
	G. Nagesh Rao	1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 January 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1) Claims 1-3, 5-10, and 12-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Smith (US Patent No. 6,500,378).

Smith 378 teaches an apparatus for creating three-dimensional objects by cross sectional lithography, whereby it is comprised of an energy source (8) which provides a source of ultraviolet or UV light reading on a light source, a holding container (12) to hold said resin material, a spatial light modulator (4) directed by suitable algorithms from the computer control system (2) to tilt specific mirrors in at least one of two directions, whereby the mirrors used are of a digital micromirror device (DMD) which are available to provided a 1280 by 1024 array of 1,310,720 individual mirrors (Col 6 Lines 1-68 and 9 Lines 16-28), thereby reading on spatial light modulator comprised of a plurality of micromirrors and a controller system capable of controlling tilt angles of said plurality of micromirrors that would be capable of controlling the quantity of irradiation light for each of a group of

irradiation region on said photosensitive material among more than two levels, said group of irradiation regions corresponding to said plurality of micromirrors (Col 9 Lines 41-49).

Furthermore there is an elevator platform (16) along with the apparatuses computer controller system that is capable and allows for a changing distance between a position where luminous fluxes going toward said group of irradiation regions are focused and a surface of said photosensitive material (Col 6 Lines 15 20 and Lines 66-67 and Col 7 Lines 1-43).

Smith 378 also teaches the computer control system that reads on a type of controller comprised of a computer which contain CPU's thus reading on electronic circuit as defined by applicant's specification, data storage, CAD data, and appropriate interface control software to process any one of CAD solid model data, geometry out put data, etc... thus enabling the system in conjunction with the spatial light modulator to be capable of enabling a relation between a quantity of irradiation light for one exposure region on a photosensitive material and an exposed depth of said photosensitive material (Col 6 Lines 20-46).

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
- 2) Claims 4, 11, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (US Patent No. 6,500,378) in view of Hagenau (US Patent No. 6,051,179).

From the aforementioned Smith 378 pertains to an apparatus for creating three-dimensional objects by cross sectional lithography.

However Smith 378 albeit teaches a computer controller system that would be capable of acting in a measuring device capacity, it fails to explicitly teach that limitation.

In an apparatus related to stereolithography processing via a three-dimensional models by spatial light modulators, Hagenau 179 teaches an apparatus similar in operation and function to that of Smith 378, whereby it teaches a controller system comprised of a computer and CAD system with a specified step 31 that involves post processor operator action for the system that aid in specifically measuring out the plurality of exposure regions and capable of measuring heights of a photosensitive material which is developed after irradiation and enabling such controller to make a table on the basis of said exposure values and said heights of photosensitive material at said plurality of exposure regions (Cols 12-13 Lines 1-68).

It would be obvious at the time of the invention to one with ordinary skill in the art to modify the teachings of Smith 378 with that of Hagenau 179 in order to provide an optimized means for the apparatus.

### ***Response to Arguments***

3) Applicant's arguments filed 1/19/06 have been fully considered but they are not persuasive. Examiner upon reading the arguments and amendments to the

claim is not convinced that applicant has put forth anything substantially new to overcome the prior art of record.

For example the amendment language incorporated into claims 1,5, and 12 are merely method limitations limiting the intended use of the device being sought for a patent. The limitations do not further structurally limit the apparatuses taught by Smith 378 nor Hagenau 179. Hagenau 179 is aiding in providing data information necessarily helpful in optimizing Smith 378's functionality.

Furthermore applicant's contention of neither Smith 378 nor Hagenau 179 not teaching a mechanism as cited in claim 2 or a moving mechanism as cited in claim 12 regarding its relation to changing a distance between a position where luminous fluxes going toward said group of irradiation regions are focused and a surface of said photosensitive material, is broadly interpreted as a manner that changes the distance between the photons emitted by the light source as it is irradiating the substrate (i.e. photosensitive material) worked upon by the apparatus. Applicant does not properly limit nor describe what exactly this mechanism is and examiner broadly interprets the elevator platform as taught by Smith 378 capable of reading on said mechanism aiding in the changing of a distance between a position where luminous fluxes (i.e. light) going toward said

group of irradiation regions are focused and a surface of said photosensitive material (i.e. how the light is shined down onto the substrate).

It is for these reasons that applicant has failed to show or put the application in condition for allowance.

***Conclusion***

4) **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.




Any inquiry concerning this communication or earlier communications from the examiner should be directed to G. Nagesh Rao whose telephone number is (571) 272-2946. The examiner can normally be reached on 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GNR

  
ROBERT DAVIS  
PRIMARY EXAMINER  
GROUP 1300-1200  
2/3/06